

**ADAPTIVE LOAD DISTRIBUTION IN MANAGING DYNAMIC AND TRANSIENT DATA  
FOR DISTRIBUTED APPLICATIONS**

**ABSTRACT**

A method, system, and computer program for dynamically adjusting  
5 the workload of an active resource associated with at least one parent  
workload group. The parent workload group includes a collection of  
workload units, with each associated to a key identifier such that  
workload units belonging to the parent workload group share an  
10 identical sequence of values at a specified depth value of the key  
identifier. The active resource independently determines whether an  
overload condition exists. If an overload condition exists, the depth  
value of the parent workload group is increased. The active resource  
may also consolidate a workload group if an under-load condition  
exists. Dynamically adjusting the workload of an active resource can  
15 be used as part of a method or system to dynamically adjust the  
workload of a distributed computing application across a dynamically  
varying set of active resources, and subsequently redirecting entities  
to the dynamically changing target resource.